



STATE DOCUMENTS

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## State Department of Health

AND ENVIRONMENTAL SCIENCES

HELENA, MONTANA

September 6, 1973

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EXECUTIVE OFFICER

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Mr. Wayne Herman, President, Flathead Wildlife Inc., P.O. Box 4, Kalispell, MT

Gentlemen:

The enclosed draft Environmental Impact Statement has been prepared for the  
Swan Meadows Subdivision near Bigfork in Flathead County, Montana.

Under Montana law, a person or agency has thirty days to submit comments  
and/or supply new supplementary information. An additional fifteen days  
may be granted upon specific request to an individual or agency. Comments  
received in response to this draft statement will be summarized and in-  
cluded in the Final Environmental Impact Statement.

Sincerely,

Wilbur O. Aikin, P.E.  
Public Health Engineer  
Environmental Sciences Division

WOA/kmh  
Enclosure

Montana State Library



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A DRAFT ENVIRONMENTAL IMPACT STATEMENT

FOR

SWAN MEADOWS

A Subdivision in Flathead County, Montana

Pursuant to the Montana Environmental Policy Act, Section 69-6504 (b)(3), the act controlling both public and private water supply and sewage disposal for subdivision, Section 69-5001; and the act to control water pollution, Section 69-4801 to 4827, the following Draft Environmental Impact Statement, is prepared by the State Department of Health and Environmental Sciences, Environmental Sciences Division, concerning the proposed Swan Meadows Subdivision, located east of Bigfork in Flathead County, Montana

LOCATION

The Montana State Department of Health and Environmental Sciences has received plans and specifications requesting approval for a subdivision which would be filed with the Flathead County Clerk and Recorder's Office as the SWAN MEADOWS SUBDIVISION.

This proposed subdivision is two and one-half miles due east of Bigfork on the south bank of the Swan River. Ferndale, a small rural school site and cross-roads community is less than a mile away to the southeast. A one-quarter mile long access road into the area will be available off of nearby Montana Highway 209.

In summary, this land division consists of 30 lots on 17 acres. The fundamental design of the tract is a slightly curvilinear grid, a circumstance imposed on the design by the bending of the contingent Swan River. All lots are 20,000 square feet, give or take a thousand, and lots with frontage on the river each feature approximately 100 feet of river shoreline.

All thirty acres are reported by the Soil Conservation Service to be located in a Class III Agricultural Capability area.

TOPOGRAPHY AND PRIOR USE

In the field, this elongate subdivision block appears as the slightly domed remnant of an old terrace. On the river side, this hummock-like rise breaks off abruptly, sloping rather sharply ten to twelve or more feet to the waters edge. On the ends, the block terminates against low indentations which would be occupied by overflow water from the river during times of spring run-off. To the east and south east a one-half acre muck and peat bog occupies a slight depression which is shown on the accompanying location map as a tiny lake.



These small terminal indentations are connected to the bog area by a very rudimentary drainage swale, and it can be seen that sometime in the past, water has overflowed the river, or seeped in along this path, and recharged the water in the pond. Comments included with the submittal indicate that the developer intends to re-establish a high water overflow system into a ditch outside the limits of the proposed subdivision. No details have been submitted as to the dimension or extent of this proposed drainage activity.

The area is being used now as a hay meadow, and except for the narrow strip of river shore line, virtually all trees and stumps have been long since cleared from the land. Deciduous trees and shrubs with a scattering of conifers line the steep stream bank. This natural green belt has obviously served the land well in protecting the fragile soil against possible incroachment by the river.

#### DESCRIPTION OF PROPOSED ACTION

Developmental concepts for all thirty lots include both individual water and individual sewer systems. The proposed method of supplying water will be by individual drilled well, and the proposed method of collecting and disposing of sanitary waste will be by septic tank and absorption field. Solid waste would be disposed of to the Flathead County Landfill Site.

#### WATER SUPPLY AND SEWAGE DISPOSAL

Individual drilled wells should be readily developable at any lot. The only foreseeable problem with regard to water supply might be in enforcing the state requirement that such wells be twenty-five feet or more deep.

The conformation of the Swan River flood plain aquifer at this point along the river has never been documented, and supporting evidence was not submitted by the developer. In the absence of any firm date, it may be possible that the real choice for water supply will be either a truly deep drilled well (100 to 300 feet), or a sandpoint well of 15 to 25 feet deep, a circumstance which would require disinfection of the flow. In either circumstance water would seem to be assured.

Approvable sewage disposal by means of septic tank and drain field along a river front location such as this hinges on two considerations; the permeability and porosity of the soil and the relative proximity of the ground water table to the surface of the ground.

Approximately seventy percent of the ground in the subdivision clearly meets the required state and county standards. Soils in this favored area are Selle Fine Sandy Loams which show both satisfactory percolation rates and an adequately deep ground water surface. They also drain well, and serve as good sites for roads, residences and play areas. Flooding would not be reasonably possible in this area.



The soils and situation along the east side and northeast end of the subdivision are a slightly different matter however. In this slightly lower area soils are Stryker Silty Loams, which have severe limitations. They percolate poorly, and they show a ground water table which is somewhat closer to the ground surface. During a 100 year flood stage it is also possible, but not proven, that some portions of the lots in the Stryker soil area might be inundated by water from the Swan River.

Despite these reservations, it must also be admitted that during a normal year (if 1973 was a normal year) all lots would and could meet the requirements of the State Department of Health. Data submitted with this proposal were taken during the period of May 26 to June 6, 1973, and in all instances the percolation tests and ground water elevations fall within an area approvable by the State Department of Health.

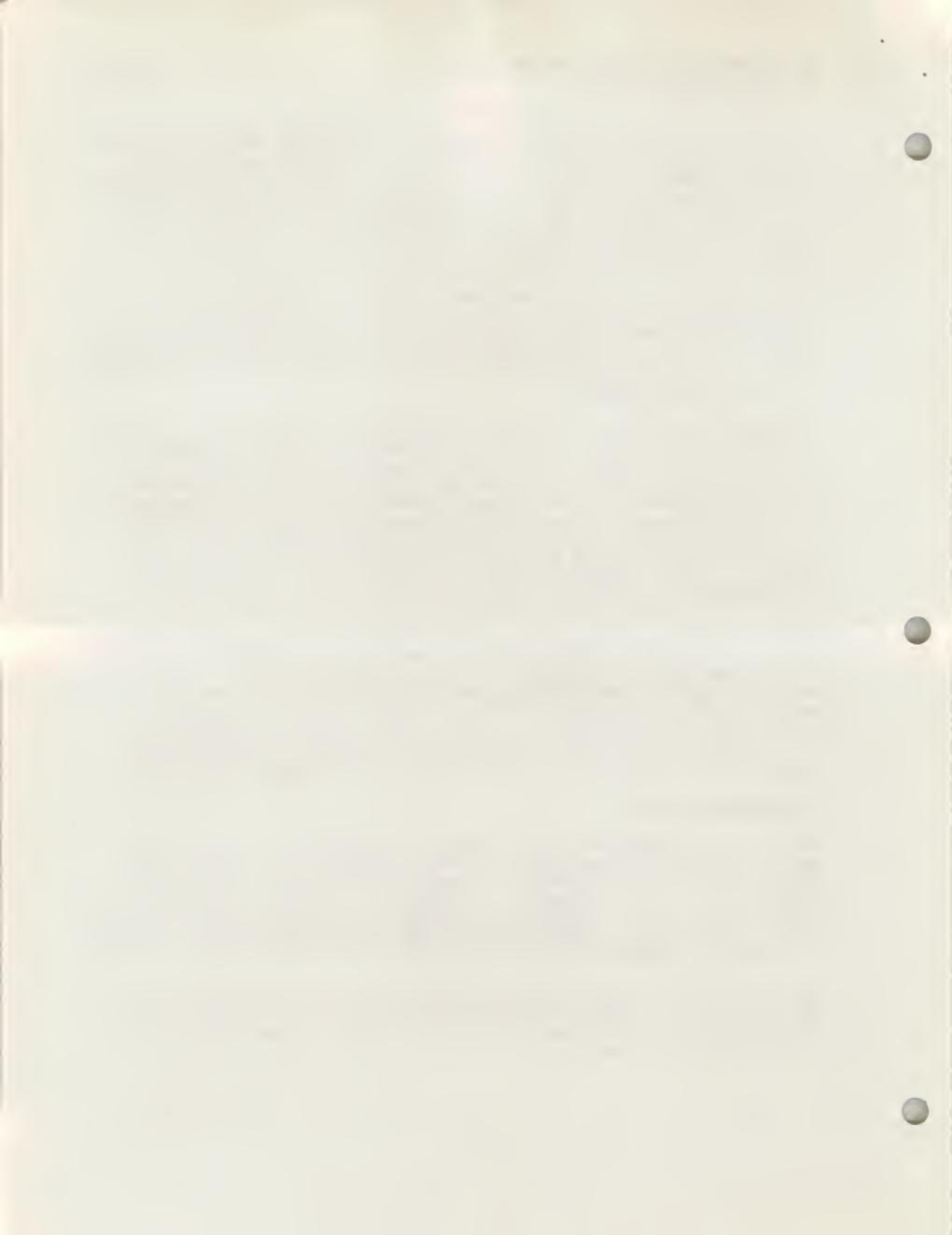
HOWEVER, this unique circumstance of a long strip of very acceptable ground flanked by a river on one side and a tight soil on the other has forced the developer to make a paper commitment which may be very hard to enforce at the county level. Since all lots are the very minimum size, all residences along the river must have their house on the water side with the drainfield back toward the central access road. Conversely, the lots on the back tier must construct their residences on the back or east property lines so that the disposal field can take advantage of the much better percolation rates afforded in the soils near the road. In terms of usefull size, the lots are therefore smaller than their measured size.

This is, in effect, a situation in which the applicable requirements of the laws and regulations are met only by superimposing a constructional geometry on the unsuspecting lot holders. This will be very difficult to enforce unless the protective covenants being conveyed with the property are closely adhered to. The Declaration of Protective Covenants should be amended to specify that no construction of a house or residence will be initiated until the County Sanitarian's office has received plans showing that the planned residence is in compliance with the provision of the "typical lot lay-out".

#### ENVIRONMENTAL IMPACT

Impact from the development will undoubtedly fall within that range associated with the residential use of riverside land for human habitation; Soil, surface/ground water, vegetation, roads, traffic, schools, services, wildlife and fish habitat, recreation. In addition lot density is as great as the statutes will allow, thus maximizing the possible problems. Close adherence to the specification of the Sanitary Approval Documents and to the Protective Covenants could lessen some of these impacts.

The Pacific Power and Light water supply intake for the unincorporated community of Bigfork is 2½ miles downstream from the proposed location. This intake consists of an infiltration gallery buried in the Swan River gravels plus a streamside dug well.



Because there is an impoundment between the intake and the subdivision, and because the flow is both disinfected (chlorinated) and pumped from the natural filter bed of the river it is difficult to believe that this subdivision could have any significant effect on the water quality of PP & L product. However, the threat of degradation to water quality and water supplies continues to mount from non-point sources as subdivision projects crowd in on the marginal locations along the Lower Swan River.

#### ADVERSE ENVIRONMENTAL EFFECTS

Ground water/surface water nutrient enrichment, loss of stream habitat, possible contamination of potable water wells, and severe soil erosion are the potential adverse effects probably to be associated with this development. Again, all can be mitigated providing lot holders are counseled in the use of their individual parcels according to the approval document, the Homeowner's Covenants and the county regulations.

The very location of any development relatively close in to a major stream also offers ample opportunity for unforeseen adverse impacts in excess of anything available for evaluation at this time.

This particularly applies to the matter of flooding, a subject that is generating a considerable amount of pro and con opinion without the benefit of any substantiated fact.

#### ALTERNATIVES

Because the data submitted with the preliminary plans appears to meet the concept criteria required by the Subdivision Law and by (Regulation) MAC16-2.14(10)-S14340, there is but one option open to the department and that is for approval.

However, the spatial awkwardness and potential controversy inherent in putting down 30 wells on thirty narrow lots confined by a river on one side and poor soil on the other does leave an unusually small amount of room available for buildings and sewage systems which will meet the myriad spacing requirements of the state and county laws.

It is apparent that Department of Health approval requirements would more securely be met if a public water supply system were specified as a required condition. Consideration of this approach has much merit:

- A. It would eliminate the inevitable proliferation of shallow sand point wells which are likely to create public health problems at some stage in the completion of the project. With a community system the safety of water supply would be secure beyond question.
- B. It would also prevent utilization of the river as a potable water source. This office has had many recent complaints in regard to individuals with frontage lots bulldozing infiltration galleries into the Swan River during the low flow months. Stream bed disturbance has been noticeable and the matter is generally beyond enforcement.



Alternatives open to other agencies with jurisdiction in specific areas are as follows:

1. Refusal by the Planning Board to recommend for acceptance and filing, owing to the fact that the site carries a high Agricultural Land classification. If this decision held, the land would remain in its existing condition insofar as subdivision is concerned.
2. Refusal by Flathead County through the Board of County Commissioners, or the County Health Department to accept or recommend for filing owing to the question of flooding, the small size of the lots and the lot density, and/or the validity of data relative to all of the lots indicated as being part of this subdivision. If this decision were accepted the plat would probably be revised to eliminate those lots or lot features deemed to be unsatisfactory.

LAND USE POLICY: The Short Term vs Long Term Perspective

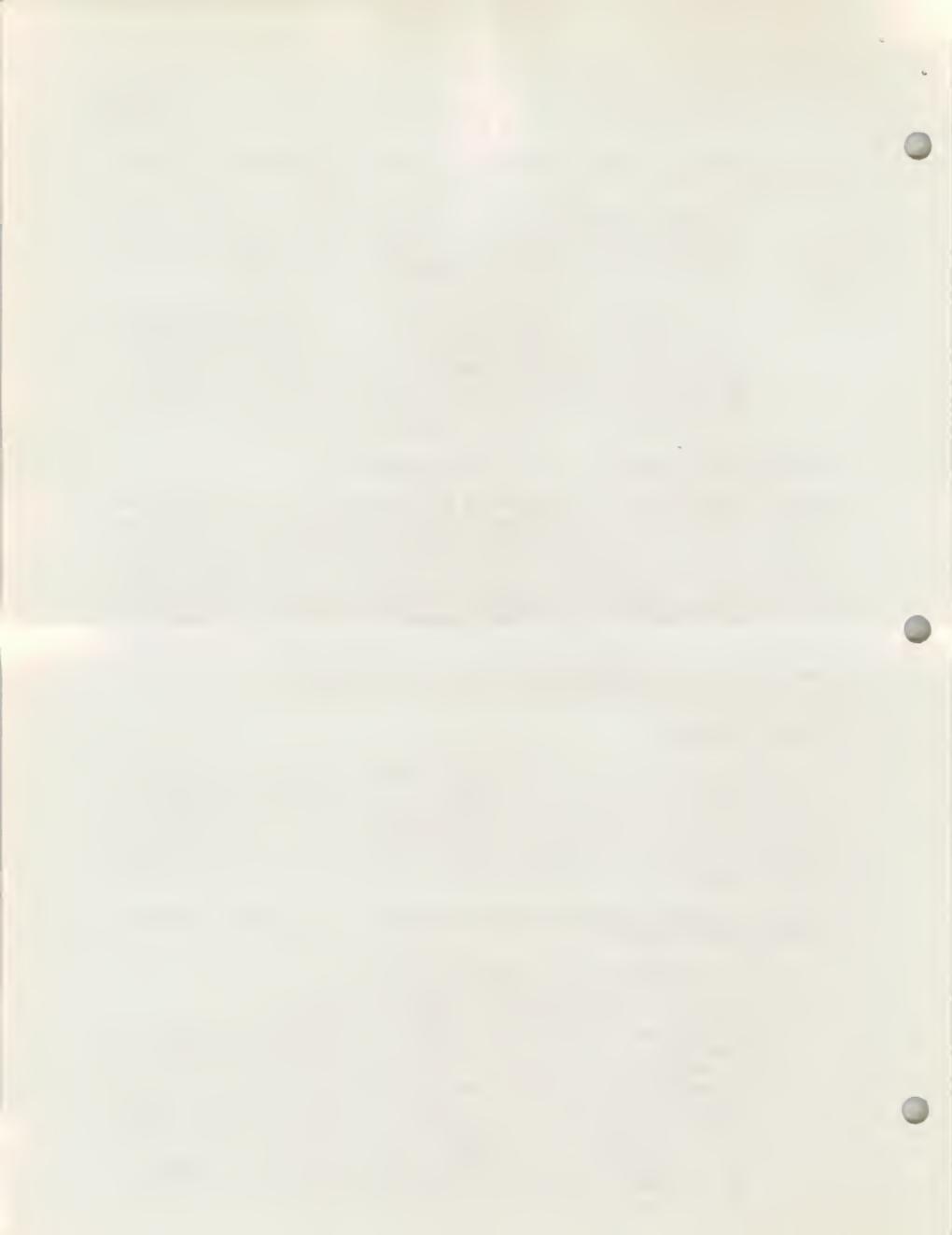
The land bounding the broad meanders of the Lower Swan River in the Ferndale area has attracted much large-lot subdivision activity in recent years. Some of this ground is in farm land soil areas with an appreciable long term agricultural value to the Flathead Valley. According to the Soil Conservation Service this project area is in just such a location. However, there appears to be an open question as to the real agricultural value of this ground despite the current classification. If true, long term - short term comparisons become badly blurred. Assuming that this is not merely Phase 1 of a much more comprehensive area development the only fair statement that can be made is that 17 acres of farm land of poorly demonstrated long term value is being lost to human habitation and disruption.

PROTECTIVE COVENANTS

The developers are well aware that there are fragile aspects to this tract that should be protected. Protective Covenants have been included as part of the submittal to meet this need. It should be understood that the enforcement of such covenants is the responsibility of the land owners, not the state or the county. Therefore, they have a very vague value and are subject to modification by those involved without regard to effect or impact on those beyond the subdivision boundaries.

Nevertheless, some of the more worthy ideas extracted from the declaration of covenants are as follows:

1. The land shall not be subdivided any further
2. No more than one single family residence per lot
3. Property is to be used for residential purposes only
4. All building plans must be submitted to an internal Home Owners Association for approval and in no event will mobile homes be allowed.
5. Lot owners shall be prohibited from cutting any trees on any lot except by permission of the Owners Association.
6. Land Owners will not use their property for any purpose that would result in the pollution of any waterway that flows through or adjacent to such property by refuse sewage or other material.
7. No weed control, insect control, rodent control, varmint control or other substance poisonous to humans, animals or wildlife shall be used without consent of the Association.



8. Excavation, ditches, trenches, pits, grading or earth cuts shall be restored to as nearly as possible to their prior undisturbed condition.

STATEMENT SOURCES

This statement was prepared by Wilbur O. Aikin, P.S.G.E., Montana Tech, a registered professional engineer and economic geologist with 22 years experience in a variety of engineering, exploration, productions, supervisory and now regulatory postions.

Data used in the preparation of this statement was accrued from information submitted to this office by Dean Marquardt, a Registered Surveyor and Professional Engineer in Kalispell, Montana. The property was also inspected in the field in the company of planning organization personnel and the County Health Department.





